# Operations

# Research

... striking the balance

# Expertise

Beneficial/productive uses
Coastal engineering
Contaminated sediments
Dredging/disposal
GIS application
Hydraulics/hydrodynamics
Physical, chemical, biological disciplines
Risk-based management
Sediment transport
Threatened and endangered species

# Capabilities

The U.S. Army Engineer Research and Development Center maintains world-class laboratories and computational infrastructure, as well as facilities.

US Army Corps
of Engineers

# Dredging Operations & Environmental RESEARCH

DOER


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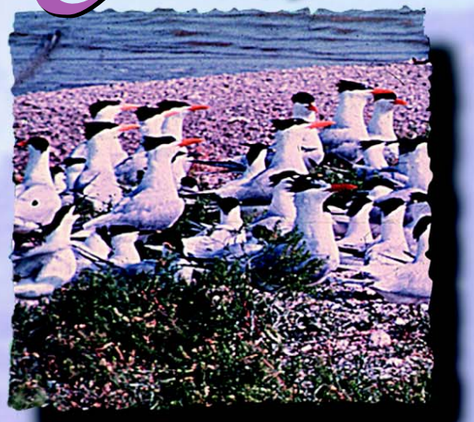
# Dredging

# Environmental



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# Nearshore & aquatic placement

Develop tools for predicting the movement, cost effectiveness, and beneficial aspects of dredged material placed in the nearshore environment

- Optimize aquatic placement options
- Demonstrate placement of sand/silt mixtures nearshore
- Develop software, databases, and models as predictive methods
- Develop planning, design, and management systems for dredging projects

# Environmental windows

Improve dredging operations flexibility through rigorous technical evaluation of restrictions

- Determine impacts of windows compliance
- Resolve technical issues
- Minimize impacts through effective operational measures
- Develop procedures that assist project managers with interagency coordination

# Contaminated sediments

Reduce cost and improve the reliability and acceptability of dredging, placing, managing, and controlling contaminated dredged material

- Develop rapid and inexpensive screening tools
- Produce guidance for contaminant pathway assessments
- Develop design guidance for contaminant controls and management
- Demonstrate bioremediation as a cost-effective treatment option
- Develop field approaches for confined facility reclamation

# Instrumentation

Develop techniques and standards for monitoring dredge operations, compliance, and assessment

- Automate contract dredge inspection
- Develop silent inspectors for pipeline dredges and disposal scows
- Develop Tons Dry Solids hopper dredge load measurement
- Optimize bottom and contaminant characterization technology

# Innovative technologies

Identify and demonstrate emerging dredging and disposal technologies in cooperation with field offices

- Identify foreign and domestic commercial technologies
- Evaluate technologies for cost savings
- Demonstrate most appropriate equipment and techniques
- Recommend implementation of best suited technologies

# Risk

Develop an approach for characterization and management of risk associated with dredging and disposal

- Develop risk assessment framework
- Produce software, databases, and models to assist risk-based decision making
- Demonstrate use of risk assessment in dredged material management
- Incorporate economic factors in risk management

# Program Notes

The Dredging Operations and Environmental Research (DOER) Program supports the U.S. Army Corps of Engineers Operation and Maintenance Navigation Program. Research is designed to balance operational and environmental initiatives and to meet complex economic, engineering, and environmental challenges of dredging and disposal in support of the navigation mission. Research results will provide dredging project managers with technology for cost-effective operation, evaluation of risks associated with management alternatives, and environmental compliance.


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